



SOCIETY OF PHYSICS STUDENTS

An organization of the American Institute of Physics

Future Faces of Physics Award Report

Instructions: Please complete each section after reading the purple text describing what should be in that section. Then delete the purple text.

Project Proposal Title	Physics Outreach to a Low Income Middle School
Name of School	Indiana Wesleyan University
SPS Chapter Number	3116
Project Lead (name and email address)	Joshua Ostrander (josh.ostrander@myemail.indwes.edu), Robert Burchell (robert.burchell4@myemail.indwes.edu)
Total Amount Received from SPS	300.00
Total Amount Expended from SPS	300.00

Summary of Award Activity

Indiana Wesleyan University Society of Physics Students (IWU-SPS) travelled to nearby McCulloch Middle School to perform demonstrations related to the physics of waves. With a diverse racial and income demographic, McCulloch Middle School was the perfect location for IWU-SPS to develop a diverse Science, Technology, Engineering, and Math work force of the future. To accomplish this, IWU-SPS spent an afternoon performing engaging and interactive demonstrations that related to the physics of waves. Approximately 50 eighth graders participated in the event led by several undergraduate IWU-SPS members.

Statement of Activity

The entire Statement of Activities should be no more than 3 pages, and organized as follows.

Overview of Award Activity

To accomplish the goals outlined in the proposal, IWU-SPS contacted the principal of McCulloch Middle School to establish an appropriate time for proposed activity. April 16 was chosen based on the schedules of the local science teachers. IWU-SPS President Robert Burchell, a graduate of McCulloch Middle School served as the primary contact. During the correspondence, Robert emphasized that the target demographics and the classes were chosen accordingly.

The activities were designed to be shown to small groups of about 6-10 students. With the current members of IWU-SPS and some students from the current general physics class, eight stations were set up in the Middle schools gymnasium. For about 90 minutes, students from McCulloch were allowed to freely explore the stations that demonstrated the physics of waves. In addition to this, a station of the IWU-SPS staple of liquid nitrogen ice cream and the IWU-SPS hovercraft were used to provide a broader overview of other areas of physics.

Impact Assessment: How the Project/Activity/Event Promoted Physics across Cultures

This project aimed to engage the racially and socioeconomically diverse population of Grant County at McCulloch Middle School. Although no formal demographic information was collected, the demographics of the students selected matched that of the school. In the future, IWU-SPS plans to develop a more formal method to assess our activities' impact on underrepresented groups in physics. The demonstrations were educational, but allowed every single student to participate in the mini experiments.

After the event, IWU-SPS placed sheets with which students and faculty could provide feedback about the physics demonstrations. Lupe S. said, "I thought it was cool how they involved us and the experiment was very neat!" Another anonymous student simply stated, "It was awesome." This feedback confirmed that our demonstrations were engaging and informative.

Key Metrics and Reflection

Please answer the questions below. Please indicate if a question is not applicable to your project.

The Future Faces of Physics Award is designed to promote projects that cross cultures. What cultures did your project attempt to bring together?	African-American, White, and a diverse group of socioeconomic students.
How many attendees/participants were directly impacted by your project? Please describe them (for example “50 third grade students” or “10 high school volunteers”).	Approximately 50 eighth graders and 3 middle school science teachers.
How many students from your SPS chapter were involved in the activity, and in what capacity?	10
Was the amount of money you received from SPS sufficient to carry out the activities outlined in your proposal? Could you have used additional funding? If yes, how much would you have liked? How would the additional funding have augmented your activity?	The funding was sufficient. Additionally, the equipment used can be used for future activities. Additional funds would make it possible for travel to more distant schools.
Do you anticipate repeating this project/activity/event in the future, or having a follow-up project/activity/event? If yes, please describe.	We plan to host a similar event next spring.
What new relationships did you build through this project?	IWU-SPS was able to connect with McCulloch Middle School Administration and the local middle school science teachers.
If you were to do your project again, what would you do differently?	Develop a formal system to evaluate the socioeconomic demographics reached.

Press Coverage (if applicable)

The projects photographs were featured on the IWU-SPS Facebook page.

<https://www.facebook.com/groups/364104810283679/>

Expenditures

Building upon demonstrations purchased with previous SPS funds, we purchased more equipment that allowed for specific wave phenomenon to be demonstrated. Supplies for Liquid Nitrogen Ice Cream were purchased

Expenditure Table

Item	Cost
Scientific Super Slinky (5X)	\$55
Spring Wave	\$20
16-Mile 22 Channel Battery FRS/GMRS Two-Way Radio	\$25
Transistor Radio	\$12
Glass Prism	\$10
Polarioid Sheets	\$25
Two Laser Pointers	\$24
Laser Pointer Mount	\$24
Speaker	\$14.40
Cell Phone Magnifier	\$15
Acoustic Demo Kit	\$42
Liquid Nitrogen Ice Cream Supplies	\$33.60
Total of Expenses	\$300

Activity Photos



IWU-SPS President Robert Burchell Welcomes Participating Students to the Outreach Event.



Jillian and Brooke use a spring to teach students about standing waves.



Valerie demonstrates magnetic levitation.



David teaches students about the wave properties of light.



If you have any questions, please contact the SPS National Office Staff
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